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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,919	04/16/2004	Reiko Ogura	075834.00486	8921
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ROBERT J. DEPKE LEWIS T. STEADMAN ROCKEY, DEPKE & LYONS, LLC SUITE 5450 SEARS TOWER CHICAGO, IL 60606-6306			EXAMINER TRINH, THANH TRUC	
			ART UNIT 1795	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/825,919

**Applicant(s)**

OGURA, REIKO

**Examiner**

THANH-TRUC TRINH

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Remark*

1. Claims 1 and 4-11 are pending in the application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US Patent 5730192)

As seen in Figures 4-10, Park teaches a method of injecting an electrolytic solution (70) into an electrolytic solution containing vessel (or battery case 60) of which a portion (the upper portion of the battery case 60 for injecting the electrolytic solution) is opened, wherein the injection is conducted by utilizing a centrifugal force. (See col. 2

line 62 to col. 4 line 29; col. 6 line 12 to col. 8 line 40). Park teaches dropping the electrolytic solution (70) to the opened portion of the electrolytic solution containing vessel (60) by filling port (220) (e.g. as seen in Figure 10); fixing the electrolytic solution containing vessel on a turntable (body 230) rotatable about a predetermined center so that the opened portion is directed toward the center (as seen in Figures 6 and 9 as the filling port 220 facing the center); and rotating the turntable about the center, to thereby inject said electrolytic solution into the electrolytic solution containing vessel (60). (See col. 2 line 62 to col. 4 line 29; col. 6 line 12 to col. 8 line 40). Since Park teaches utilizing centrifugal force and the filling port 220 facing the center of the turntable (as seen in Figures 6 and 10), wherein the electrolyte feeding apparatus (240) injects electrolyte by way of the filling port (as seen in Figures 5, 8 and 10); therefore it would have been obvious to one skilled in the art to recognize that Park teaches rotating the turntable about the center (as shown by the arrow in Figures 6 and 9), and the apparatus of Park injects the electrolytic solution that has been dropped into the electrolytic solution container (such as battery case 60) while rotating the turntable about the center, and the electrolytic solution is traveled to the depth of the container by the operation of centrifugal force. Park also teaches filling case (60) having winding assembly (50) with electrolyte (70; see col. 2 lines 62-67, col. 6 lines 23-25, Figures 1-2), therefore the opening into which the electrolytic solution (or electrolyte 70) is dropped of Park extends across one side of the electrolytic solution container (e.g. the top side).

3. Claims 4-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of either Yamanaka et al. (US Application Publication 20010004901) or Mikoshiba et al. (US Patent 6384321)

Park teaches a method of injecting an electrolytic solution into an electrolytic solution containing vessel as described in claim 1.

The difference between Park and the instant claims is the requirements of the electrolytic solution containing vessel such as having rectangular in shape; an internal size in one direction of a section of the electrolytic solution containing vessel is in the ranges of 1 to 200  $\mu\text{m}$ , 10 to 200  $\mu\text{m}$ , and 20 to 150  $\mu\text{m}$ .

With respect to claims 4-6 and 9, as seen in Figures 1-4 and 9-10, Yamanaka et al. teaches a solar cell battery with a rectangular compartment bordered by a glass frit 7 and electrodes 4 and 8, wherein the height of the compartment, or an internal size in one direction of a section of the electrolytic solution containing vessel, is found to be 2.1-70  $\mu\text{m}$  by adding the diameter of 2-20  $\mu\text{m}$  of the glass beads 9 and the thickness of 0.1-50  $\mu\text{m}$  of the semiconductor layer 5. (See paragraphs 0039, 0077 and 0088-0096)

With respect to claim 9, Mikoshiba et al. also teaches the container have rectangular shape (See Figure 1)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Park by using a electrolytic solution containing vessel with a shape and an internal size as taught by Yamanaka et al. or rectangular container as taught by Mikoshiba et al., because a simple substitution of one known element (Park's battery case) for another (Yamanaka et al's rectangular

electrolytic solution containing vessel or compartment) would achieve the predictable result of injecting electrolytic solution into an electrolytic solution containing vessel.

4. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of McEwen et al. (US Patent 5965054).

Park teaches a method of injecting an electrolytic solution into an electrolytic solution containing vessel as described in claim 1.

Park does not teach the viscosity of the electrolytic solution being not more than 20 or 10 cp.

McEwen et al. teaches an electrolytic solution used in batteries, photovoltaic devices having viscosity of 0.59 cP. (See col. 5 lines 18-26), wherein the viscosity of the solution is mainly the viscosity of the solvent (See table 1). McEwen et al. also teaches the viscosity can be lowered by adding low viscosity agents (See col. 3 lines 11-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the electrolytic solution taught by McEwen et al. in the method of Park, because McEwen et al. teaches this electrolytic solution would be useful in electrical storage device such as batteries or photovoltaic devices by providing a high conductivity. (See the Summary of McEwen et al.).

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Yamanaka et al. (US Application Publication 20010004901).

Regarding claims 10-11, Park teaches a method of injecting an electrolytic solution (70) into an electrolytic solution containing vessel (or battery case 60) of which a portion (the upper portion of the battery case 60 for injecting the electrolytic solution) is opened, wherein the method is conducted by rotating body (230) to utilize a centrifugal force. (See col. 2 line 62 to col. 4 line 29; col. 6 line 12 to col. 8 line 40). Park describes dropping the electrolytic solution (70) to the opened portion of the electrolytic solution containing vessel (60) by filling port (220) (as seen in Figure 10); fixing the electrolytic solution containing vessel on a turntable (body 230) rotatable about a center so that the opened portion is directed toward the center (as seen in Figures 6 and 9 as the filling port 220 facing the center); and rotating the turntable about the center, to thereby inject said electrolytic solution into the electrolytic solution containing vessel (60). (See col. 2 line 62 to col. 4 line 29; col. 6 line 12 to col. 8 line 40). Since Park teaches utilizing centrifugal force and the filling port 220 facing the center of the turntable (as seen in Figures 6 and 10), wherein the electrolyte feeding apparatus (240) injects electrolyte by way of the filling port 220 (as seen in Figures 5, 8 and 10); therefore it would have been obvious to one skilled in the art to recognize that Park teaches rotating the turntable about the center (as shown by the arrow in Figures 6 and 9), the apparatus of Park injects the electrolytic solution into the electrolytic vessel container (such as battery case 60) by dropping electrolytic solution (from the feeding apparatus) to an open end portion of the container (e.g. top portion of the container) while rotating the turntable about the center, and the electrolytic solution flows to the depth of the container by the operation of centrifugal force. Park also teaches filling

case (60) having winding assembly (50) with electrolyte (70; see col. 2 lines 62-67, col. 6 lines 23-25, Figures 1-2), therefore the opening into which the electrolytic solution (or electrolyte 70) is dropped of Park extends across one side of the electrolytic solution container (e.g. the top side).

The difference between Park and the instant claims is that the method is for wet-type photoelectric conversion device and the electrolytic solution is injected into a space between a semiconductor electrode with a dye and a counter electrode.

Yamanaka et al. teaches a method of manufacturing a rectangular wet-type photoelectric conversion device (or solar cell), wherein an electrolytic solution (or a redox electrolyte) is injected into a space (6) between a semiconductor electrode (5) comprising a dye and a counter electrode (8) opposed to the semiconductor electrode. (See Figures 1-6, 9-12; paragraphs 0087-0140)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Park by substituting the battery case with an electrolytic solution containing vessel having a shape and an internal size as taught by Yamanaka et al., because a simple substitution of one known element (Park's battery case) for another (Yamanaka et al.'s rectangular electrolytic solution containing vessel or compartment) would achieve the predictable result of injecting electrolytic solution into an electrolytic solution containing vessel.

***Response to Arguments***



Applicant's arguments filed 7/8/2009 have been fully considered but they are not persuasive.

Applicant argues that none of the references teach or suggest the electrolytic solution is dropped to an opened end portion of an electrolytic solution container and wherein the opening extends across one side of the electrolytic solution container. However, Applicant's argument is not deemed to be persuasive. Park teaches dropping the electrolytic to an opened end portion of an electrolytic solution container (e.g. case 60 having winding assembly 50 therein; see Figures 1-2, col. 2 lines 63-67, col. 6 lines 23-25), wherein the opening extends across one side of the container (e.g. the top side) since during the operation of injecting electrolyte 70 the case 60 contains only the winding assembly 50 below the bending portion 61 (as seen in Figure 2) which leaves the portion above the bending portion 61 of case 60 opens across one side (e.g. the top side). Such opening extends across one side of the container during the operation of injection electrolyte is typical and well known in the art. (See Figures 3-4 of Kasahara et al., US Patent 5487417)

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 5487417.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THANH-TRUC TRINH whose telephone number is (571)272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nam X Nguyen/  
Supervisory Patent Examiner, Art Unit 1753

TT  
9/22/2009